REMARKS

I. Introduction

Claims 1-17 are all the claims pending in the application, and claims 1-17 have been examined. Claims 1-17 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Additionally, claims 1-15 and 17 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Stillwell et al., U.S. Patent No. 4,384,289 (hereinafter "Stillwell").

Applicant overcomes the § 112, second paragraph, rejections as well as the prior art rejections of claims 1-15 and 17 as follows.

II. Claim Rejections -- 35 U.S.C. § 112, Second Paragraph

Claims 1-17 stand rejected under § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

A. Claims 1 and 2

Applicant amends claims 1 and 2 to further clarify that a radio wave is emitted to illuminate a zone of the equipment in radio energy (*i.e.,* to supply a zone of the equipment with radio energy) close to a point where a physical parameter is to be monitored. Furthermore, in response to the Examiner's query regarding where the recited digital signal is derived from, Applicant respectfully submits that any structure providing the digital signal is not germane to

the analysis of these method claims. Instead, claims 1 and 2 require that the received radio wave be re-emitted with amplitude-modulation responsive to a digital signal related to the physical parameter. Applicant is not required to unduly narrow these method claims by specifying "where the digital signal is derived from".

Thus, Applicant respectfully submits that claims 1 and 2 are sufficiently definite under § 112, second paragraph, and requests that the Examiner withdraw the § 112, second paragraph, rejections of claims 1 and 2.

B. Claim 4

As discussed above for claims 1 and 2, Applicant amends claim 4 to further clarify that a radio wave is emitted to illuminate a zone of the equipment in radio energy (*i.e.*, to supply a zone of the equipment with radio energy) close to a point where a physical parameter is to be monitored. Furthermore, in response to the Examiner's query regarding where the recited digital signal is derived from, Applicant respectfully submits that claim 4 expressly recites "a sensor for producing a digital signal related to a determined physical parameter at a point to be monitored".

Thus, Applicant respectfully submits that claim 4 is sufficiently definite under § 112, second paragraph, and requests that the Examiner withdraw the § 112, second paragraph, rejection of claim 4.

C. Claim 5

Applicant amends claim 5 to further clarify that the sensor unit is activated by the energy of a radio wave received by said antenna.

In response to the Examiner's query regarding a two state sensor, Applicant respectfully points the Examiner to the illustrative, non-limiting discussion of such a sensor on page 4, lines 4-17 of Applicant's Specification. Furthermore, element 30 of Applicant's Fig. 2 illustrates such a two state sensor (in the "open" state).

Thus, Applicant respectfully submits that claim 5 is sufficiently definite under § 112, second paragraph, and requests that the Examiner withdraw the § 112, second paragraph, rejection of claim 5.

D. Claim 10

Applicant amends claim 10 to further clarify that the sensor unit is activated by the energy of a radio wave received by said first antenna.

As discussed above, the claimed invention does not require the use of light, but uses the term "illuminating" to refer to the application of (radio) energy onto a zone of the equipment. This terminology is clear from a thorough reading of Applicant's specification.

Thus, Applicant respectfully submits that claim 10 is sufficiently definite under § 112, second paragraph, and requests that the Examiner withdraw the § 112, second paragraph, rejection of claim 10.

E. Claim 16

In response to the Examiner's query regarding a representation of the circuit recited in claim 16, Applicant respectfully points the Examiner to the illustrative, non-limiting discussion of such a sensor on page 6, lines 7-15 of Applicant's Specification. Furthermore, Applicant's Fig.

2 illustrates such a circuit (with element 30 providing an illustrative, non-limiting example of the recited contact).

Thus, Applicant respectfully submits that claim 16 is sufficiently definite under § 112, second paragraph, and requests that the Examiner withdraw the § 112, second paragraph, rejection of claim 16.

In view of the above, claims 1-17 are sufficiently definite under § 112, second paragraph, and thus the Examiner is requested to withdraw the § 112, second paragraph, rejections of claims 1-17.

III. Claim Rejections -- 35 U.S.C. § 103(a)

Claims 1-15 and 17 stand rejected under § 103(a) as allegedly being unpatentable over Stillwell.

Stillwell describes a transponder unit for measuring temperature and current on live transmission lines (Stillwell: Abstract). In particular, Stillwell describes a transponder unit for sensing the operating temperature and current through a power transmission line (Stillwell: col. 1, lines 57-68). However, Stillwell does not relate to the problems addressed by the present invention, for example, monitoring the temperature of live conductors in high or medium voltage equipment in locations that are inaccessible (*see, e.g.,* Applicant's page 1, lines 13-19). Thus, the components described in Stillwell can be quite large in size (*see, e.g.,* Stillwell: col. 1, lines 35-

68), as well as more complicated and costly (*e.g.*, Stillwell illustrates the use of A/D converters in Fig. 7, which are not required by the present invention -- *see* Applicant's page 7, lines 5-10).

Claim 1 recites, *inter alia,* "emitting a radio wave for illuminating a zone of the equipment in radio energy close to a point where a physical parameter is to be monitored" and "re-emitting the received radio wave with amplitude-modulation responsive to a digital signal related to said physical parameter" (*see also* claims 2, 4, 5 and 10). Stillwell clearly fails to teach or suggest any such two-way transmission of radio waves. To the contrary, Stillwell describes that a patch antenna 29 is used to transmit electrical signals, which correspond to a temperature sensed by a thermal sensor, to a receiver (not shown). This one-way transmission of radio waves, as described in Stillwell, does not correspond to the aforementioned recited features of claim 1 (*see also* claims 2, 4, 5 and 10).

For at least these exemplary reasons, claims 1, 2, 4, 5 and 10 are patentable under § 103(a) over Stillwell. Consequently, claims 3, 6-9, 11-15 and 17 are patentable at least by virtue of their dependency.

IV. Formal Matters

A. Priority

Applicant thanks the Examiner for acknowledging Applicant's claim for foreign priority under 35 U.S.C. § 119, including receipt of the priority document.

B. Information Disclosure Statement

Applicant thanks the Examine for providing a signed and initialed copy of the Form PTO-1449 submitted with the IDS filed on August 30, 2000, thereby indicating consideration of the references cited therein. However, the Examiner failed to initial by the two references listed under "Other Documents". Thus, Applicant respectfully requests the Examiner to provide another copy of the Form PTO-1449 clearly indicating the disposition of these two references in the next correspondence.

C. Abstract

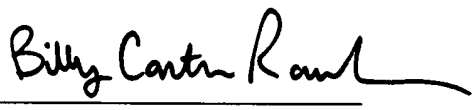
Applicant amends the Abstract of Disclosure to comply with MPEP § 608.01, thus overcoming the Examiner's objection thereto.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A method of monitoring live electrical equipment at high or medium voltage, the method comprising the following steps:

–emitting a radio wave for illuminating a zone of the equipment in radio energy close to a point where a physical parameter is to be monitored;

–re-emitting the received radio wave with amplitude-modulation responsive to a digital signal related to said physical parameter; and

receiving the retransmitted radio wave outside the equipment and demodulating it to obtain a signal related to said parameter.

2. (Amended) A method of monitoring live electrical equipment at high or medium voltage, the method comprising the following steps;

–emitting a radio wave for illuminating a zone of the equipment in radio energy close to a point where physical parameter is to be monitored;

–re-emitting the received radio wave with amplitude-modulation responsive to said physical parameter crossing a threshold at said point; and

–receiving the retransmitted radio wave outside the equipment and demodulating it to obtain a signal indicative of said threshold being crossed.

4. (Amended) An apparatus for monitoring live electrical equipment at high or medium voltage, the apparatus comprising:

–at lease one sensor unit placed on the equipment, comprising a first radio antenna, a sensor for producing a digital signal related to a determined physical parameter at a point to be monitored, and amplitude-modulation means connected to the sensor and to the first antenna, and activated by the energy received by said antenna;

–a transceiver unit placed outside the equipment and having a second radio antenna for emitting a radio wave to illuminate ~~illuminating~~ the first antenna, a power supply source, and signal processing means connected to the second antenna; and

–the first antenna retransmitting towards the second antenna the radio wave that has been transmitted thereby, while simultaneously amplitude-modulating it in response to the output signal of the sensor, said processing means being arranged to provide a signal related to said parameter.

5. (Amended) An apparatus for monitoring live electrical equipment at high or medium voltage, the apparatus comprising:

–at least one sensor unit placed on the equipment, comprising a first radio antenna, a two-state sensor responsive to a determined physical parameter at a point to be monitored, the sensor

changing state when said parameter crosses a threshold, and amplitude-modulation means connected to the sensor and to the first antenna, and activated by the energy of a radio wave received by said antenna;

–a transceiver unit placed outside the equipment and having a second radio antenna for illuminating the first antenna, a power supply source, and signal processing means connected to the second antenna; and

–the first antenna retransmitting towards the second antenna the radio wave that has been transmitted thereby, while simultaneously amplitude-modulating it in response to the state of the sensor, said processing means being arranged to provide a signal sgn(12) indicative of the state of the sensor.

10. (Amended) An apparatus for monitoring high or medium voltage electrical equipment such as a three-phase distribution bay, the apparatus comprising:

–at least one sensor unit per phase, the unit being placed on a live element of the equipment and comprising a first radio antenna, a two-state sensor responsive to temperature at a point of said conductor, the sensor changing state when the temperature crosses a threshold, and amplitude-modulation means connected to the sensor and to the first antenna, and activated by the energy of a radio wave received by said first antenna;

–a transceiver unit placed outside the equipment and having a second radio antenna for illuminating the first antenna, a power supply source, and signal processing means connected to the second antenna; and

–the first antenna retransmitting to the second antenna the radio wave transmitted by the second antenna together with amplitude-modulation in response to the state of the sensor and to information identifying the sensor, said processing means being arranged to supply, for each sensor unit, a signal sgn(12) indicative of the state of the sensor together with associated identity information Id(12).

IN THE ABSTRACT OF DISCLOSURE:

The abstract is changed as follows:

~~ABSTRACT~~

~~A METHOD AND APPARATUS FOR MONITORING LIVE ELECTRICAL EQUIPMENT AT HIGH OR MEDIUM VOLTAGE~~

ABSTRACT

An apparatus for monitoring live electrical equipment at high or medium voltage~~, the apparatus comprising:~~

~~–at least one~~ includes a sensor unit placed on the equipment~~, comprising~~ having a first radio antenna, a sensor for producing a digital signal related to a determined physical parameter at a point to be monitored, and an amplitude-modulator ~~amplitude modulation means~~ connected to the sensor and to the first antenna, and activated by the energy received by said antenna;

–a transceiver unit placed outside the equipment and having a second radio antenna for illuminating the first antenna, a power supply source, and a signal processor ~~processing means~~ connected to the second antenna; and

–the first antenna retransmitting towards the second antenna the radio wave that has been transmitted thereby, while simultaneously amplitude-modulating it in response to the output signal of the sensor, and the processor ~~said processing means~~ being arranged to provide a signal related to said parameter.